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ABSTRACT

This study examined the relationship between school connectedness and academic achievement using structural equation modeling. Results for 1,758 seventh graders from a midwestern urban school system indicate that school-initiated connectedness has an indirect effect on student achievement through student peers' desire to be connected to each other and through the individual's choice of being connected to his or her schooling experiences. It is asserted that the continuing efforts of administrators, teachers, and staff toward reducing student alienation from school can be successful by increasing students: (1) integration with the school context; (2) full engagement in the learning process; and (3) sense of connectedness to one another, school staff, and school activities. (Contains 4 figures and 13 references.) (Author/SLD)

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# A mediation model relating teacher ratings of student achievement to student connectedness at school

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Abstract

This study examines the relationship between school connectedness and academic achievement using structural equation modeling. Results indicate that school-initiated connectedness has an indirect effect on student achievement through student peers' desire to be connected to each other and through the individual's choice of being connected to their schooling experiences. Consequently, we believe that continuing efforts of our administrators, teachers and staff towards reducing student alienation from school can be successful by increasing students': (1) integration with the school context, (2) full engagement in the learning process and (3) sense of connectedness to one another, school staff and school activities.

# A mediation model relating teacher ratings of student achievement to student connectedness at school

They just gave up on our entire generation
So we were all pushed to the side
Cause we didn't see the world through our teachers eyes....
Now you would think the classrooms' the place for mental stimulation
But there's some brothers' outside sellin' that stuff that will really stimulate your mind
How can I face the world that doesn't know me?
World that doesn't care whether I live or die
And why? Cause I go to City High

*City High Anthem by City High (2001)*

## Introduction

This study, as part of a district-wide effort to promote school connectedness, examines the relationship between school connectedness and academic achievement using structural equation modeling. Preliminary results indicate that efforts of principals, teachers and staff to be connected to their students have a positive effect on student achievement.

## Alienation at School

Newmann (1981) suggests that student alienation be characterized as fragmentation, estrangement, and detachment. Efforts to reduce alienation are therefore aimed at increasing students': (1) integration with the school context, (2) full engagement in the learning process and (3) sense of connectedness to one another, school personnel and school context. Though alienation is seen as an aspect of social structure, with roles and functions existing independently from a person's perception of alienation, it can also be seen from a psychological perspective. Psychological aspects of alienation include: (1) *cultural estrangement*, the individual's rejection of values commonly held in society, such as the value of a high school education, (2) *self-estrangement*, the individual's engagement in activities that are not intrinsically rewarding, like taking required curriculum and (3) *social isolation*, the sense of exclusion from social groups, evidenced

by behavioral problems or dropping out (Janosz, LeBlanc, Boulerice, & Treblay, 1997; Jenkins, Patricia H., 1997).

Furthermore, communality is the tendency to affiliate with others and to identify with groups and organizations (Newmann, 1981). Communal experiences help individuals form connections to one another, thus establishing a sense of belongingness and reducing the alienation of individuals at school. Students are more connected to school when teachers treat students fairly and when they feel close to people at school (Albrecht, Reynolds, Cornelius, Heidinger & Armfield, 2002). More importantly, a sense of social connectedness at school allows adolescents to identify with those who are different from them (Lee & Robbins, 1995; Lee, Draper & Lee, 2001). However, adolescents who struggle to feel connected begin to feel distant from others and have difficulty accepting social roles and responsibilities that leads them to greater social isolation. (Bonny, Britto, Klostermann, Hornung & Slap, 2000; McNeely, Nonnemaker and Blum, 2002). For our purposes, school connectedness will be defined as adolescents' experience of being cared about at school and sense of closeness to school personnel and context. Moreover, school connectedness is viewed as an important aspect of children's socio-emotional development in school and is currently used by district-level administrators as an indicator of the relational support provided by peers, teachers and administrators within various organizational arrangements of the schooling environment, i.e. magnet schools, alternative schools, neighborhood schools (See Figure 1).

Middle School Adolescents

Middle schools are society's most powerful force to recapture adolescents drifting in our schools and society (Task Force on Education of Young Adolescents, 1989). Toby

(1980) observes that middle schools contain troublesome, "involuntary" students who are disconnected from the educational process but are too young legally to leave school. Middle schools of today can be considered the place to recapture adolescents who are disassociated from the educational process; therefore, our current research project examines students' sense of connectedness to groups of people in urban middle schools and to important aspects of the middle school context. As can be seen from the lyrics from City High Anthem, adolescents still feel alienated at school, experiencing a lack of connectedness to people at school and school contexts. They consequently may forfeit the opportunity to learn important knowledge and skills that will enable them to become an integral part of our dynamic American culture. By understanding the nature of students' connectedness at schools, we hope to provide an important piece of information regarding the ongoing sense of alienation that many students experience. This preliminary analysis is one step forward in understanding our students' sense of connectedness to the people and context of schools in our urban district.

Current Study

The current study examines the structure of connectedness at school, i.e. how school-initiated connectedness (SCHIC) and peer-initiated connectedness (PIC) are related to student-initiated connectedness (STIC) and student achievement (SA) in seventh-grade students.

SCHIC – connectedness from school personnel and school context to the student

PIC – peers providing each other with a caring school context

STIC – student effort to be connected to individuals and context at school

SA – student proficiencies for writing, reading, and math

From a *theoretical* standpoint, this study provides empirical evidence that connectedness among different school groups and with the school context is related to academic achievement. From an *analytic* standpoint, this study enables us to understand the process of connectedness in schools. Finally, from a *practical* point of view, our study encourages professional educators to continually find ways to connect children to the schooling experience through the collective efforts of principals, teachers and staff and the reinforcement of peer group connectedness and student connectedness to schools.

Models to be Tested

Four theoretical models of school connectedness were examined. The first model, which is called the full model, tests the direct relationships of school-initiated connectedness and peer-initiated connectedness to student achievement and all indirect relationships of school-initiated connectedness and peer-initiated connectedness through student connectedness to student achievement. The next three models are nested in the first model; tests of these models are guided by a priori and empirical considerations. These three models are more parsimonious than the first model, with the fourth model having the greatest degree of parsimony. The more parsimonious models represent effects that have been intentionally constrained to zero and allow for tests of specific hypotheses (Kline, 1998). The second model deletes the direct relationship between school-initiated connectedness and student achievement, and postulates that only an indirect relationship exists between school-initiated connectedness and academic achievement. The third model deletes the direct relationship between peer-initiated connectedness and student achievement, and postulates that only an indirect relationship

exists between peer-initiated connectedness and academic achievement. The fourth model deletes the direct relationships between school-initiated connectedness and peer-initiated connectedness and student achievement, and postulates that only indirect relationships exist between school-initiated connectedness and peer-initiated connectedness and academic achievement.

## Methods

### Subjects

Seventh-grade students (N = 1758) from a mid-western urban school system participated in this study. The sample contained 51.9% females, 36.6% of the students were on free/reduced lunch plans, and 56.5% of the students were white. Only students who had complete information available on all characteristics were used in this preliminary study.

### Materials

The Connectedness Survey was given in the Fall of 2000 and the Spring of 2001 to middle-level students and their teachers. The Connectedness Survey has five sub-scales: Connectedness from School Context, Connectedness from School Staff, Connectedness from Teachers, Peer-Initiated Connectedness, Student-Initiated Connectedness. Only students responded on these sub-scales. All sub-scales were measured with a Likert scale from 1 to 5, with 1 denoting never and 5 denoting always. Connectedness from School Context contained items like "This school offers courses and programs I find interesting". The Cronbach alpha for this sub-scale was .70.

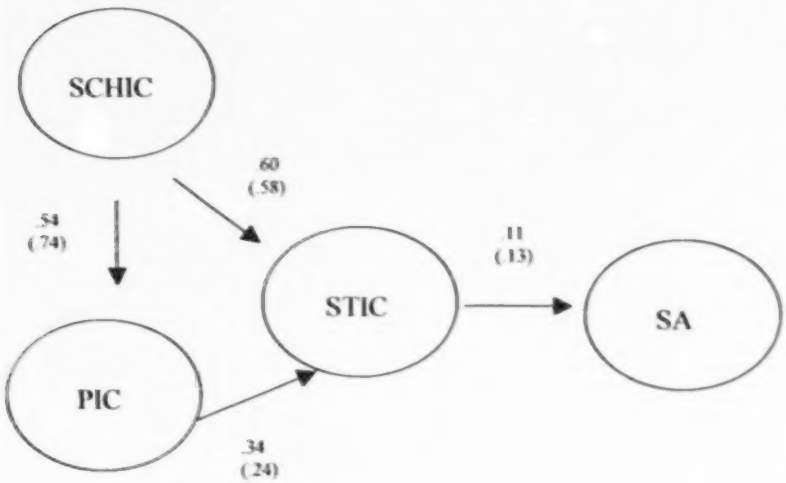
Connectedness from School Staff had a Cronbach alpha of .83 and had items like "School office staff members are responsive to my needs". The Cronbach alpha was .84 for Connectedness from Teachers and contained items like "Teachers at this school care about me and are concerned for my well being". A second-order factor analysis showed that Connectedness from School Context, Connectedness from School Staff and Connectedness from Teachers formed a second-order factor that for the current study is labeled School-Initiated Connectedness. Peer-Initiated Connectedness contained a Cronbach alpha of .59 and had items such as "At this school my classmates seem to care about me". The Student-Initiated Scale consisted of items like "I treat other students at this school in a caring and respectful manner". The Cronbach alpha for this sub-scale was .79.

Student achievement was a teacher-reported measure of writing, reading and math proficiencies ranging from "exceeds grade level expectations" to "needs improvement". Teachers rated students achievement in these three domains at the same time the students answered the Connectedness Survey in the Fall of 2000 and the Spring of 2001.

## Results

The following models were analyzed using Amos 4.01. Connectedness from School Context, Connectedness from School Staff and Connectedness from Teachers formed a second-order factor and is labeled as School-Initiated Connectedness since it stems from characteristics of the school setting acting upon the student to form a bond from school to student. Model 4 was found to be the best theoretical and empirical model for this data.

Model 4, Fall 2000

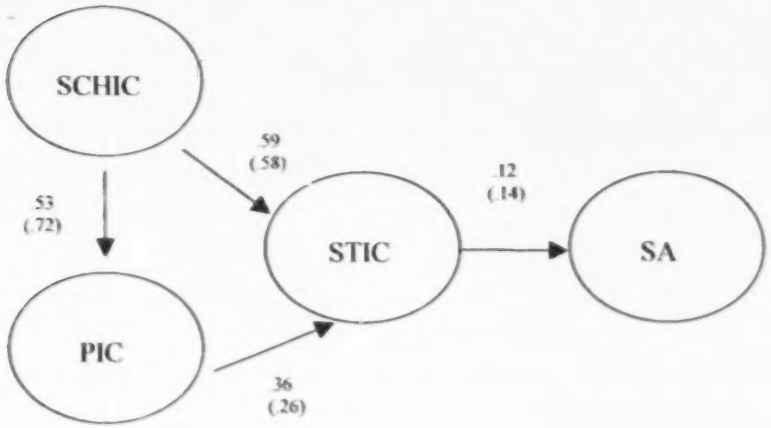



Note: standardized path values in parentheses

The $\chi^2$ Goodness of Fit for this model is 2349.4, $p<.0001$. This significant result indicating lack of fit between model and data is anticipated due to our large sample size. Other indices indicate that this model has a nice fit to the data: CFI = .95, PNFI = .84, RMR = .05, RMSEA = .05. The Hoelter index is computed if the chi-square is statistically significant. The index states the sample size at which the chi-square would not be significant. Hoelter recommends values of at least 200. Values less than 75 indicate very poor model fit. For Model 4 the Hoelter value at $\alpha = .05$ is 514.

These results for Model 4 were from the Fall 2000 data. To validate the model findings across time with the same students, models 1-4 were run with the Spring 2001 data. Model 4 is presented here.

Model 4, Spring 2001




The $\chi^2$ Goodness of Fit is 1925.01, $p < .0001$. Again, this significant result indicating lack of fit between model and data is anticipated due to our large sample size. Other indices indicate that this model has a nice fit to the data: CFI = .95, PNFI = .84, RMR = .05, RMSEA = .04. The Hoelter value at $\alpha = .05$ is 510.

## Discussion

Results of our analyses indicate that school-initiated connectedness has an indirect effect on student achievement through peer desire to be connected to one another and through individual choice of being connected to schooling experiences. Consequently, we believe that continuing efforts of administrators, teachers and staff towards reducing student alienation can be successful by increasing students': (1) integration with the school context, (2) full engagement in the learning process and (3) sense of connectedness to one another, school staff and school activities.

However, further studies on school connectedness are warranted. Our current study examined the process of school connectedness and academic achievement, but it did not shed enough light to understand our ultimate goal, i.e. providing information regarding *who* is experiencing alienation and therefore a lack of connectedness at school. Even though further tests confirmed Model 4 across gender, ethnicity and socio-economic status we do not know if lack of connectedness at school also differs by achievement groups among students. More specifically, it does not tell us if these potential differences are related to actual achievement gaps in reading and mathematics. So our process model, though valuable, does not help us understand whether or not achievement gaps can be diminished if school connectedness is increased among different groups of students. It implies that this might be the case, but empirical evidence will need to be provided to support that contention.

Our future studies will also examine the nature of cultural estrangement, self-estrangement and social isolation among middle level students. We hope to help students endorse the goal of a high school education by increasing their interest in important school curriculum and attendance at school, and by decreasing their sense of isolation from the school context, personnel and student peers.

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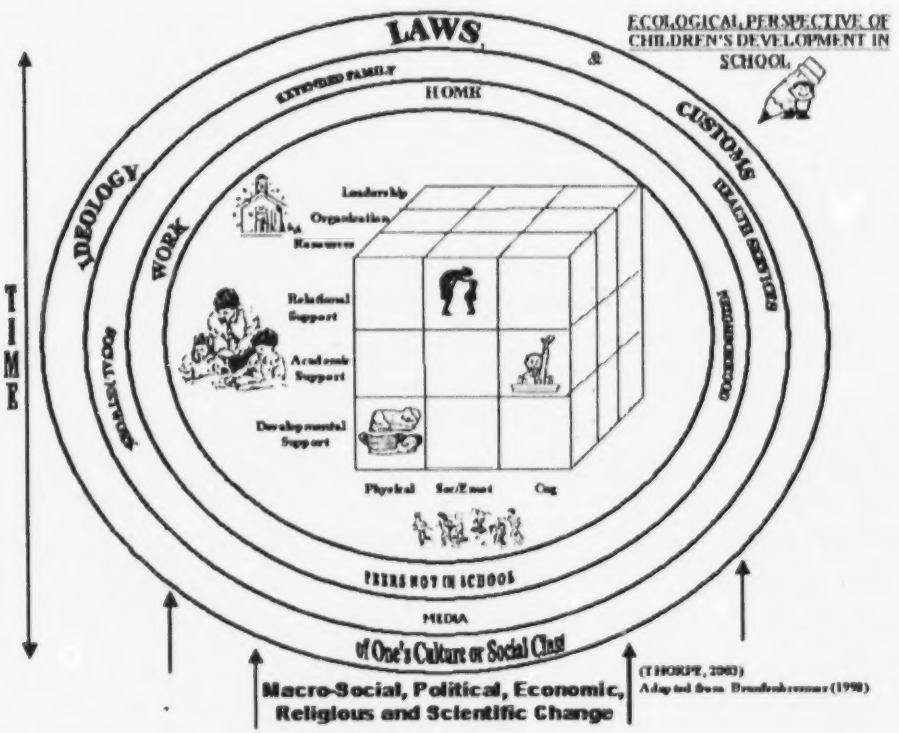
Figure 1. Ecological perspective of children's development in school.



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